


Managing Hardware

Objectives

- ▶ Understand plug and play hardware
- ▶ Install a printer
- ▶ View printer properties
- ▶ Manage printers and print jobs
- ▶ Install hardware devices
- ▶ View system hardware
- ▶ View hardware settings
- ▶ Remove hardware devices


A **hardware device** is any physical device that you plug into and that is controlled by your computer. This device can be, for example, a network or sound card that you install inside your computer, or it can be a printer or a scanner that you plug into the outside of the computer. Windows XP makes it easy to manage your hardware. In this unit, you learn how to install hardware automatically with Windows plug and play, install a printer using the Add Printer Wizard, manage printers and print jobs, view hardware properties with the Device Manager, and remove hardware from the computer quickly and easily.

 John Casey, owner of Wired Coffee Company, uses Windows to install, manage, and remove different computer hardware devices and to learn about plug and play hardware in the process.





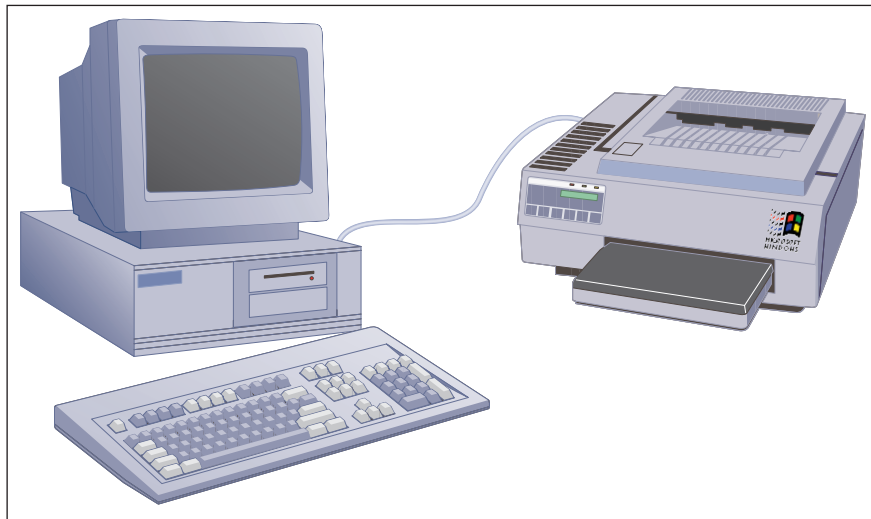
Understanding Plug and Play Hardware

Windows XP includes plug and play support for hardware, making it easy to install and uninstall devices quickly. With **plug and play** support, you simply plug the device in, and Windows sets the device to work with your existing hardware and resolves any system conflicts. When you install a hardware device, Windows installs related software, known as a **driver**, that allows the hardware to communicate with Windows and other software applications. Plug and play automatically tells the device drivers where to find the hardware devices. Plug and play matches up physical hardware devices with the software device drivers that operate them and establish channels of communication between each physical device and its driver. With plug and play, you can be confident that any new device will work properly with your computer and that your computer will restart correctly after you install or uninstall hardware.  John wants to install a new printer, so he decides to learn about plug and play devices. Plug and play supports only those devices that indicate that they are plug and play compatible, as shown in Figure N-1.

Details

In order to install a plug and play device, you need to do the following:

- ▶ Gather your original Windows XP CD-ROMs, the hardware device that you want to install, and the disks that come with the device if available.
- ▶ Turn off your computer before you physically install a hardware device, such as a network card or a sound card, inside your computer. To install a hardware device that plugs into the outside of your computer, such as a scanner or printer, you can use the Add Hardware utility program in the Control Panel without turning off your computer.
- ▶ Follow the manufacturer's instructions to plug the new device into your computer.
- ▶ Turn on your computer or start the Add Hardware utility program in the Control Panel. Windows tries to detect the new device and install the device drivers. If Windows doesn't recognize the new hardware device, the device might not be plug and play compatible or installed correctly. Turn off your computer, check the device documentation and installation carefully, then turn on your computer again. If the device driver is not available on your computer, Windows asks you to insert into the appropriate drive the Windows XP installation CD-ROM or the disk that comes with the device from the manufacturer.
- ▶ Follow the instructions on the screen until a message indicates that you are finished. Windows automatically notifies all other devices of the new device so there are no conflicts and manages the power requirements of your hardware and peripherals by shutting them down or conserving power when you are not using them. And, if you are working in another program when you install or uninstall a device, plug and play lets you know that it is about to change your computer configuration and warns you to save your work.

FIGURE N-1: Computer with attached printer via a cable

Understanding printers


Although there are many different kinds of printers, there are two main categories: ink- or bubble-jet, and laser. An **ink-jet printer** works by spraying ionized ink at a sheet of paper. Ink-jet printers are less expensive and considerably slower than laser, but still produce a good quality output. A **laser printer** utilizes a laser beam to produce an image on a drum, which is rolled through a reservoir of toner and transferred to the paper through a combination of heat and pressure. Laser printers are faster and produce a higher quality output than ink-jets, but are also more expensive. Printers are classified by two main characteristics: resolution and speed. Printer resolution refers to the sharpness and clarity of a printed page. For printers,

the resolution indicates the number of dots per inch (dpi). For example, a 300-dpi printer is one that is capable of printing 300 distinct dots in a line one-inch long, or 90,000 dots per square inch. The higher the dpi, the sharper the print quality. Printer speed is measured in pages per minute (ppm). The speed of printers varies widely. In general terms, ink-jet printers range from about 4 to 10 ppm, while laser printers range from about 10 to 30 ppm. The speed depends on the page's contents: if there is just text or the page has only one color, the ppm is in the high range, but when a page contains graphics and/or has multiple colors, the ppm rate falls to the low range.




Windows XP

Installing a Printer

To install a printer, you do not need to shut down your computer. Simply attach the printer cable to the appropriate connector on your computer, according to the manufacturer's instructions, and plug in the power cord. If you connect your printer to your computer through a USB port, Windows automatically detects the new hardware device and installs the printer, and you are ready to print. Otherwise, you can use the Add Printer Wizard in conjunction with the Found New Hardware Wizard to detect and install the printer. If the Found New Hardware Wizard doesn't detect your printer, you can also use the Add Printer Wizard to manually perform the task. The Add Printer Wizard asks you a series of questions to help you install either a network or local printer, establish a connection, and print a test page. If the printer does not work properly, Windows starts an automated troubleshooter to help you fix the problem.  John purchased a new HP OfficeJet printer. In this lesson you don't actually install a new printer, but you step through the wizard to learn how it installs the appropriate software.

Steps 1234

QuickTip

If your Start menu command is not available, double-click the Add or Remove Programs icon  in the Control Panel to install Fax Services.

QuickTip

If you were actually installing a printer, you would turn on the detection feature so that the Found New Hardware Wizard could automatically complete the installation for you.

Trouble?

If an HP OfficeJet printer is already installed on your computer, select another printer, or click the "Keep existing driver (recommended)" option button if necessary, then click OK.

Trouble?

If the Windows XP installation CD-ROM is not available, click Cancel, then click OK in Step 7 to cancel the operation. For the remaining lessons, you will need to use a printer that is currently installed on your computer.

1. Click the **Start button** on the taskbar, then click **Printers and Faxes**

The Printers and Faxes window opens, as shown in Figure N-2, in Tiles view.

2. In the task pane, click **Add a printer**, then click **Next** in the wizard dialog box

The next wizard dialog box asks you to specify whether you are installing a local or network printer. A **local printer** is a printer that is directly connected to your computer, and a **network printer** is one that is connected to a network to which you have access.

3. Click the **Local printer attached to this computer option button** if necessary, click the **Automatically detect and install my Plug and Play printer check box** to deselect it if necessary, then click **Next**

The next wizard dialog box asks which port you want to use with this printer. A **port** is the location on the back of your computer where you connect the printer cable. You can connect the cable to either a printer port, which is labeled LPT1 or LPT2, to a communications port, which is labeled COM1 or COM2, or to a Universal Serial Bus port, which is labeled USB.

4. Click the **Use the following port option button** if necessary, make sure the recommended port is selected in the list box, then click **Next**

The next wizard dialog box asks you to select a printer.

5. Press **[H]**, click **HP** in the Manufacturer list if necessary, click **HP OfficeJet** in the Printers list, as shown in Figure N-3, then click **Next**

The next wizard dialog box asks you to type a name for the printer and whether you want the printer to be the default printer. HP OfficeJet appears as the printer name, and the No option is selected. If you have access to several printers, the default printer is the printer that you use most often. When you start a print job without specifying a particular printer, the job is sent to the default printer. A black dot with a checkmark appears, as shown in Figure N-4.

6. Click **Next**, click the **Do not share this printer option button** if available, then click **Next**

The next wizard dialog box asks if you want to print a test page.

7. Click the **No option button**, click **Next**, then click **Finish**

Since the printer is not connected, you do not need to print a test page. Normally, printing a test page is important to make sure the printer is working properly. Windows XP may need to install a printer driver from the CD-ROM to complete the printer installation.

8. If necessary, insert the Windows XP installation CD-ROM into the appropriate drive, click **OK**, then click the **Close button** in the Windows XP CD-ROM window

The printer icon appears in the Printers and Faxes window, as shown in Figure N-4.

FIGURE N-2: Printers and Faxes window

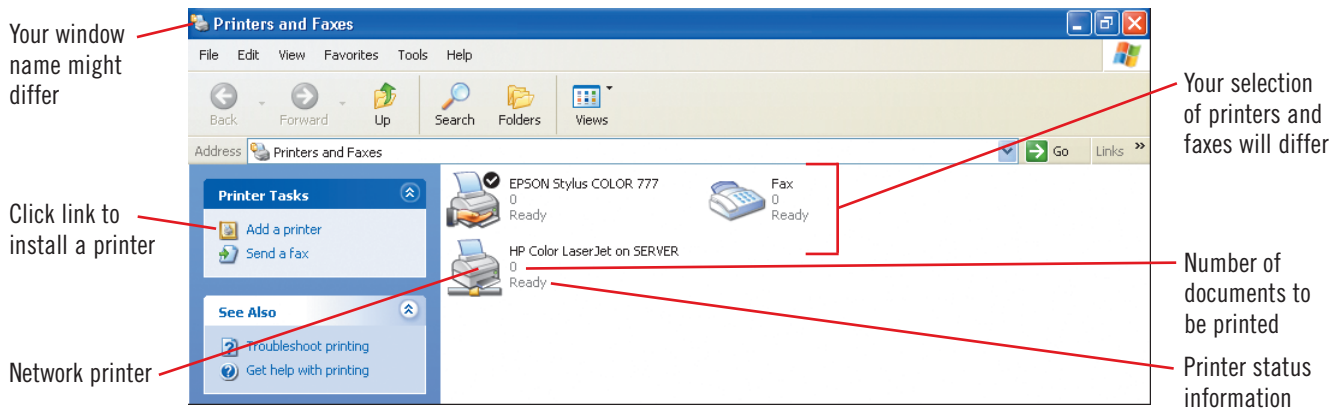


FIGURE N-3: Add Printer Wizard dialog box

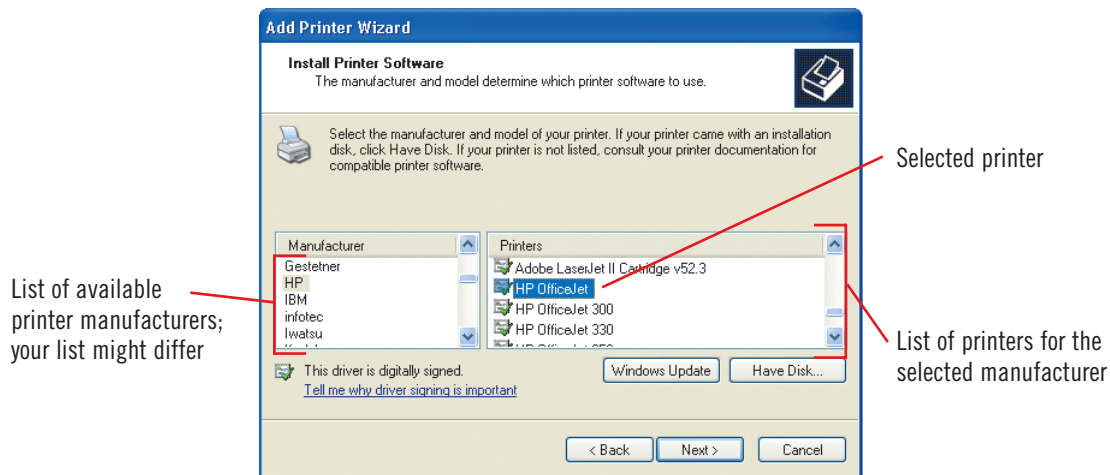
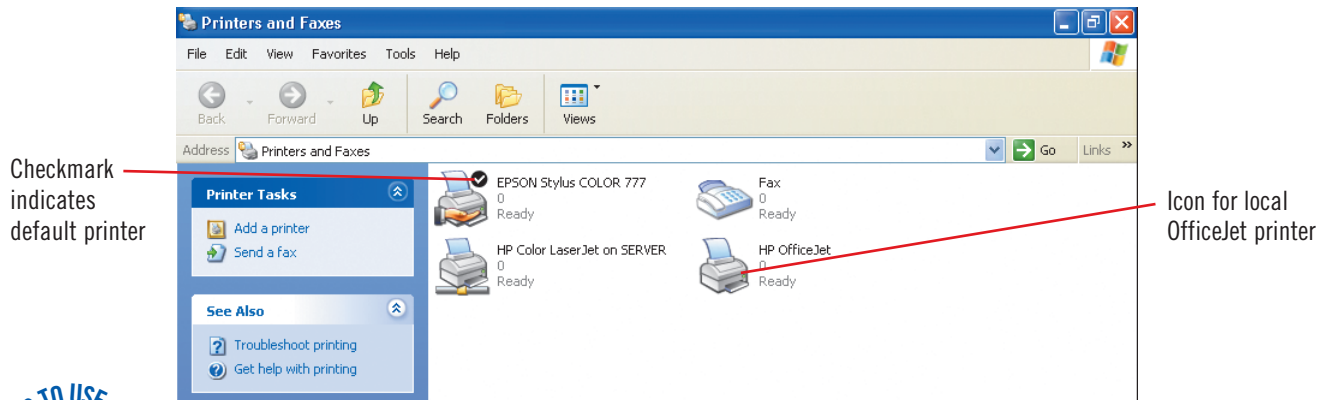


FIGURE N-4: Printers and Faxes window with new printer



Understanding USB ports

A printer port is called a **parallel port**, which sends more than one byte simultaneously. A communications port is called a **serial port**, which sends information one byte at a time. The USB port is a new technology that is expected to replace parallel and serial ports. A **USB (Universal Serial Bus) port** is an external hardware interface on the computer that allows you to connect a USB device. A single USB port can be used to connect

up to 127 peripheral devices, such as mice, modems, and keyboards, and supports data transfer rates of 480 Mbps (480 million bits per second). USB also supports plug and play installation and **hot plugging**, which is the ability to add and remove devices to a computer while the computer is running and have the operating system automatically recognize the change.



Viewing Printer Properties

After you install a printer, the printer appears in the Printers and Faxes window and in a program's Print dialog box, where you can view and change printer properties and personal preferences. Viewing printer properties gives you information about a printer's computer connection or network location, sharing options, related software drivers, color management options, graphics settings, installed fonts, and other advanced settings, such as spooling. **Spooling**, also known as **background printing**, is the process of storing a temporary copy of a file on the hard disk and then sending the file to the print device. Spooling allows you to continue working with the file as soon as it is stored on the disk instead of having to wait until the file is finished printing. In addition to printer properties, you can also view and change personal printer preferences, such as orientation, page order, pages per sheet, paper size, paper tray selection, copy count, and print quality and color. When you change personal printing preferences from the Printers and Faxes folder, the default settings are changed for all documents you print to that printer. When you change personal preferences from the Print or Pages Setup dialog boxes within a program, the settings are changed for individual documents. ~~John~~ John wants to view the printer properties and personal preferences of the printer he just installed to make sure that the settings are correct.


Steps 1234

Trouble?

If a connected printer is not available, click the HP OfficeJet icon, then skip Steps 5 and 6 in this lesson.

QuickTip

To troubleshoot a printer, click Troubleshoot printing in the task pane if available, then follow the instructions.

1. In the Printers and Faxes window, click a **printer icon** connected to your computer, scroll down the task pane if necessary, then click the **Details down arrow**  in the task pane if necessary

Every installed printer on your computer is represented by an icon in the Printers window. When you select a printer icon, status information for that printer appears in the Details section of the task pane, as shown in Figure N-5, such as number of documents to be printed, and whether the printer is ready to print. When a printer icon in the window appears with a cable, it indicates a network printer. When a printer icon appears without a cable, it indicates a local printer. When a printer icon appears with a hand, it indicates a **shared printer**, a printer that is directly connected to your computer and is shared with other network users.

2. In the task pane, click **Set printer properties**

The Printer Properties dialog box opens displaying the General tab, as shown in Figure N-6. Table N-1 describes the Printer Properties tabs in the dialog box; your tabs might differ.

3. Click **Printing Preferences**

The Printing Preferences dialog box opens, displaying your printer's specific options. When you change these printing preferences, the default settings are changed for all documents you print to this printer.

4. Click each available tab to display your printer's specific options, then click **OK**
Tabs and options vary from printer to printer.

5. Click **Print Test Page**

A dialog box opens, asking if the test page printed correctly. The test page looks fine.

6. Click **OK** to close the dialog box

7. Click the **Ports tab**

The Ports tab shows a printer's local connection.

8. Click the **Advanced tab**

The Advanced tab shows a printer's current driver and gives you specific printing choices, such as print spooling to speed up printing.

9. Click **OK** to close the Printer Properties dialog box

FIGURE N-5: Printers and Faxes window

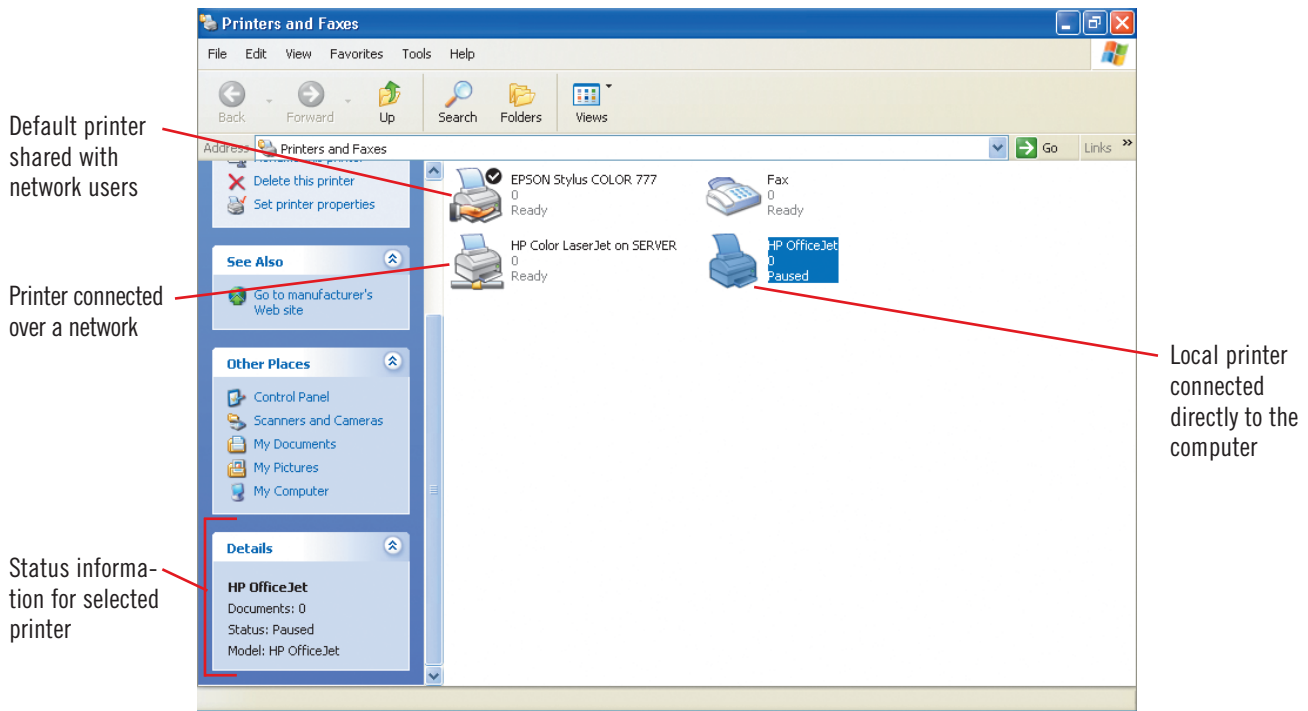


FIGURE N-6: HP OfficeJet Properties dialog box with General tab

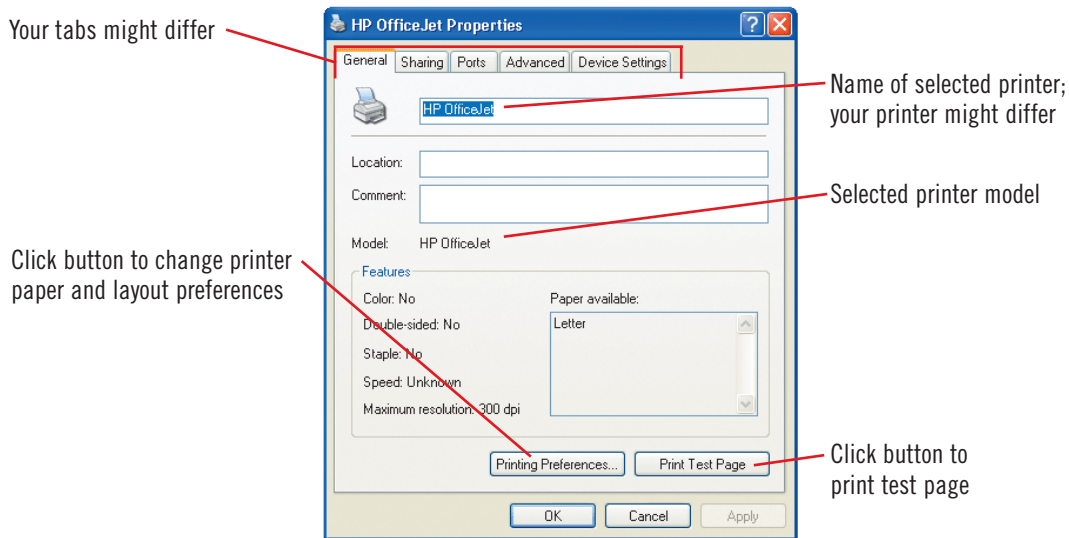



TABLE N-1: Tabs in the Printer Properties dialog box

tab	description
General	Lists general information about the printer and allows you to print a test page
Sharing	Allows you to share the printer over a network
Ports	Lists the printer's connection port and software drivers
Advanced	Lists software drivers and allows you to change printer options
Device Settings	Allows you to change printer device and related settings



Managing Printers and Print Jobs

After you send a print job to the printer from the Print dialog box in a program, or drag files in the My Computer window to the printer icon in the Printers and Faxes window, you can check the status. To check the status of a printer or manage multiple print jobs, you can double-click the appropriate printer icon in the Printers and Faxes window or on the taskbar in the notification area. A window opens showing the **print queue**, which is the list of files to be printed. You can use this window to cancel print jobs, temporarily pause print jobs, view printer properties, and so on. If you are having problems with a printer or print job, you can **defer**, or halt, the printing process to avoid getting error messages. With deferred printing, you can send a job to be printed even if your computer is not connected to a printer. To do this, you pause printing, and the file waits in the print queue until you turn off pause printing.  John wants to learn how to manage the printer and print jobs. Because you are not actually printing to a real printer, you will use deferred printing in this lesson.

Steps 1234


QuickTip

To get more information about a printer from the manufacturer, select the printer in the Printers window, then click Go to manufacturer's Web site in the task pane.

1. In the Printers and Faxes window, click the **HP OfficeJet icon** if necessary, then click **Pause printing** in the task pane

In Tiles view, the HP OfficeJet icon displays the status change from ready to paused. Pause printing prevents the computer from attempting to send a print job to the printer, which is useful when your printer is turned off or not connected to your computer as in this example.

2. Click the **Start button** on the taskbar, point to **All Programs**, point to **Accessories**, then click **Paint** to open the program
3. Click **File** on the menu bar, click **Open**, navigate to the drive and folder where your Project Files are located, then double-click **Burst Sign** to open it
4. Click **File** on the menu bar, click **Print**, click the **HP OfficeJet icon** in the Print dialog box as shown in Figure N-7 if necessary, then click **Print**

The file is sent to the HP OfficeJet printer, and a printer icon  appears in the notification area on the taskbar, indicating that print jobs are pending. Since you paused the printer, nothing prints; the job simply waits in the print queue until you either delete the job or connect a printer to your computer. In Tiles view, the number of files to be printed changes from 0 to 1.

5. Open the **Coffee Roast** file from the drive and folder where your Project Files are located, print the file to the HP OfficeJet printer, then Close the Paint window

The Coffee Roast file is sent to the HP OfficeJet printer. In Tiles view, the number of files to be printed changes from 1 to 2. You want to check the status of your print jobs.

QuickTip

To view jobs sent to a network printer, you need to go to the computer that is physically connected to the printer and double-click the printer's icon in the Printers window.

6. Double-click the **HP OfficeJet icon** in the Printers and Faxes window

The HP OfficeJet window opens, as shown in Figure N-8. The HP OfficeJet window displays the printer status in the title bar and the print jobs currently in the queue. The files are listed in the order in which they will be printed.

7. In the HP OfficeJet window, right-click **Burst Sign**, then click **Pause**

The printing status of the selected file is changed to paused. When you want to print the paused file, right-click the file, then click Resume.

QuickTip

To delete a single file from the print queue, select the file, click Document on the menu bar, then click Cancel.

8. Click **Printer** on the menu bar, click **Cancel All Documents**, click **Yes** to confirm the cancellation, then click the **Close button** for all open windows
All print jobs are deleted from the queue.

FIGURE N-7: Printing a file to a paused printer

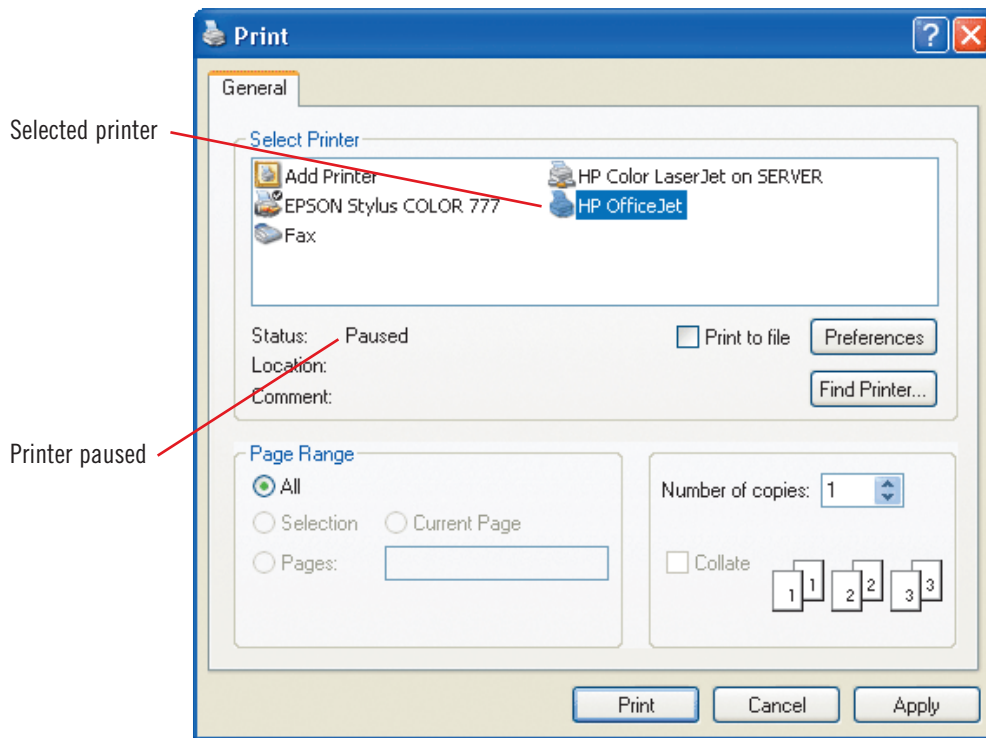
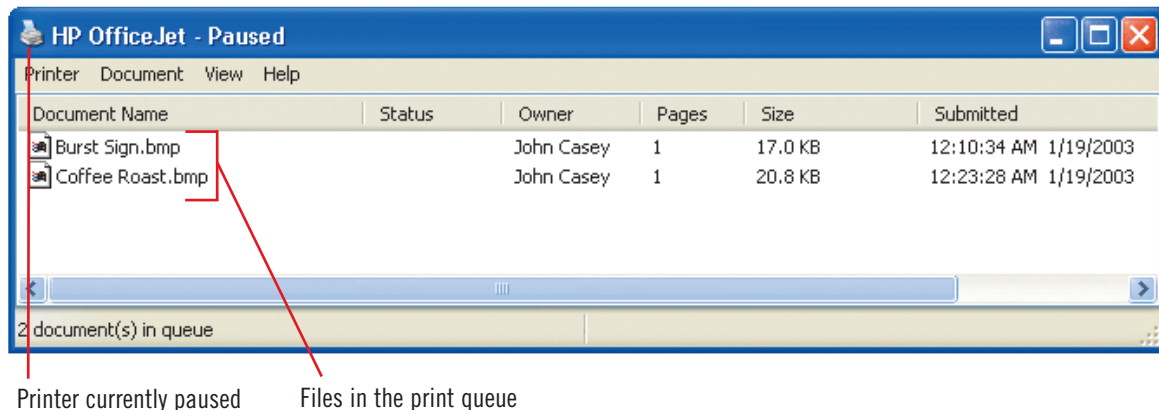


FIGURE N-8: HP OfficeJet window




Adding a separator page to print jobs

When you work in a network environment in which many different users print their jobs on the same printer, adding a separator page to your files can be helpful. A **separator** (or **banner**) page lists the name, author, date, and time of the print job. You can only set up separator pages to a network printer with an administrator's permission. To add a separator page to print jobs, right-click the network printer icon in the Printers and Faxes window, then click Properties. In the Properties dialog box, click the Advanced tab, then

click Separator Page. In the Separator Page dialog box, click Browse, select one of the separator files that Windows provides in the System32 folder or navigate to and select a custom separator page, then click Open. Click OK in the Separator Page and the Properties dialog boxes. The separator files provided by Windows might not work with some printers. To turn off the Separator Page feature, delete the filename and path in the Separator Page dialog box.




Installing Hardware Devices

Before you install a new hardware device, be sure to carefully read the product documentation and installation guide provided by the manufacturer. If the hardware device comes with an installation CD-ROM, it is recommended that you not use the Add Hardware Wizard provided by Windows and use the manufacturer's CD-ROM and related instruction to install the hardware instead. If the product documentation instructs you to perform a typical plug and play installation, turn off your computer, physically connect your hardware to your computer, then turn on your computer again. In most cases, Windows automatically detects your new hardware device and starts the Add Hardware Wizard. The Add Hardware Wizard installs hardware devices by asking you a series of questions to help you set up the necessary software for the new hardware device to work properly on your computer. If Windows doesn't detect the new hardware, you can start the Add Hardware Wizard in the Control Panel and select the new hardware device to install it.  John uses the Add New Hardware Wizard to install support software for a hardware device, a digital camera, he just connected to his computer. In this lesson you don't actually install a new hardware device, but you step through the wizard to learn how it installs the appropriate software for the hardware device.

Steps 1234

1. Close all open programs if necessary, click the **Start button** on the taskbar, click **Control Panel**, then click **Switch to Classic View** if necessary
The Control Panel window opens.

2. Double-click the **Add Hardware icon** , then click **Next** in the first Add Hardware Wizard dialog box
The wizard searches for any new plug and play devices that are on your system. When it doesn't find one, the wizard asks if the hardware device is connected to your computer.

3. Click the **Yes, I have already connected the hardware option button**, then click **Next**
The wizard asks you to add a new device or to select the installed device to check properties or troubleshoot.

4. Scroll down to the bottom of the list, click **Add a new hardware device** as shown in Figure N-9, then click **Next**

QuickTip

Because an actual hardware device is not connected to your computer, you want this feature to be active; if you were actually installing a hardware device, you would let Windows search for the new hardware device.

5. Click the **Install the hardware that I manually select from a list (Advanced) option button**, then click **Next**
The wizard asks you to select the type of hardware for which you want to install the support software.

6. Click **Imaging devices** as shown in Figure N-10, then click **Next**
The wizard asks you to select the make and model for the new hardware. Devices are listed alphabetically. The currently selected manufacturer is Agfa, and the model is Agfa ePhoto 1280 Digital Camera.

7. Click **Next** to accept the current selection, click **Automatic port detection** if necessary, then click **Next**
The wizard asks you to enter a name for the device.

8. Click **Next** to accept the default device name, then click **Finish** to install the software

Trouble?

If the Windows XP installation CD-ROM is not available, click OK, then click Cancel.

9. If necessary, insert the required Windows XP installation CD-ROM in the appropriate drive, click **OK**, then click the **Close button** in the Windows XP CD-ROM window
Windows needs to install the appropriate driver to complete the installation. You then return to the Control Panel.

FIGURE N-9: Add Hardware Wizard dialog box

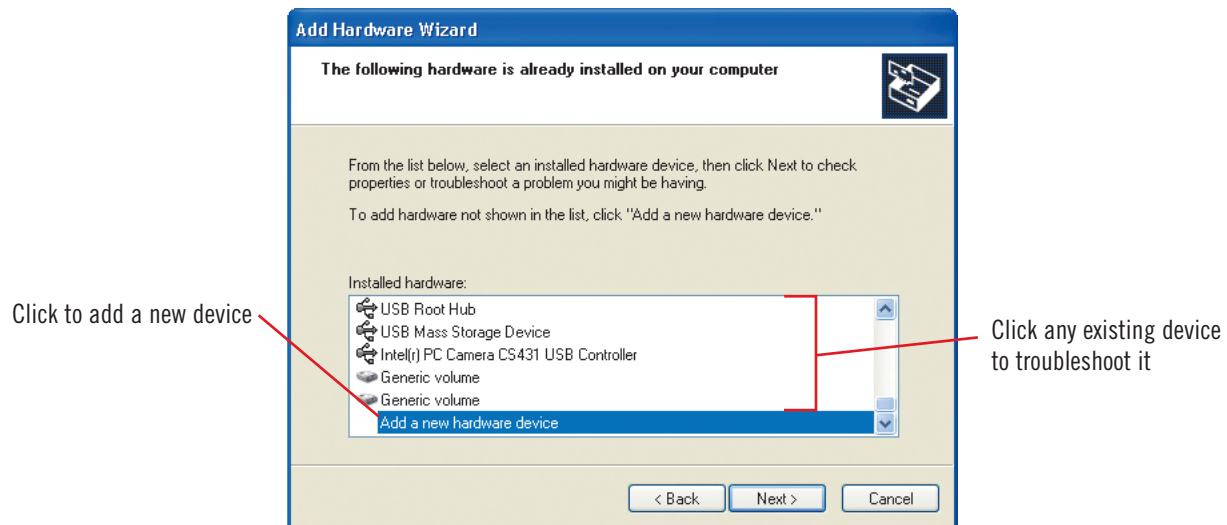
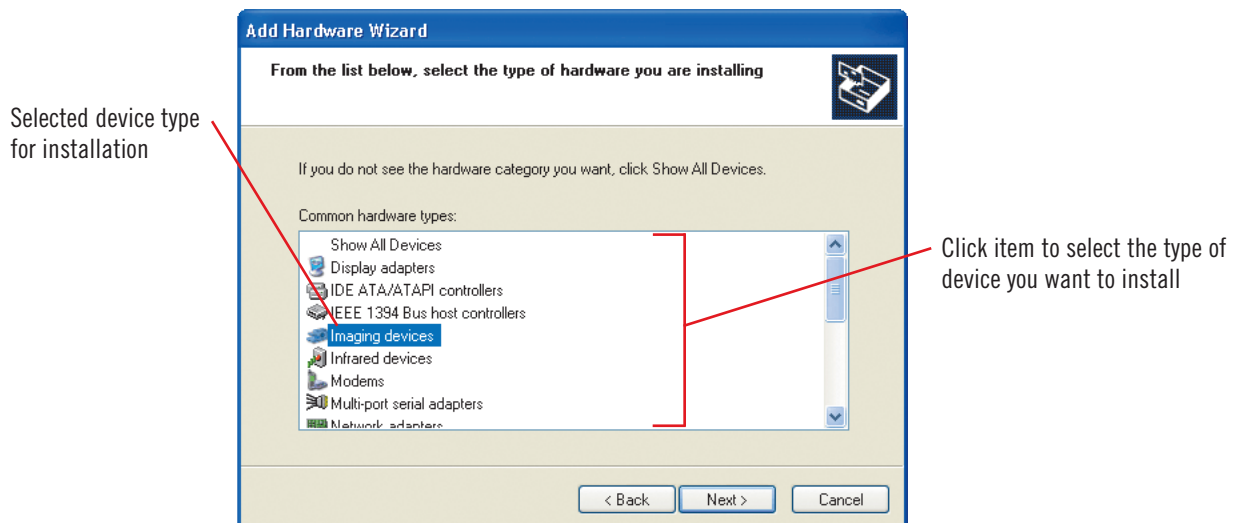



FIGURE N-10: Choosing a hardware device to install




Installing a scanner or digital camera

Installing a scanner or digital camera is easy with plug and play: plug the scanner or camera into your computer, then, if Windows detects the plug and play device, the Scanner and Camera Installation Wizard automatically starts. If Windows doesn't detect the device, you can click Add an imaging device in the task pane in the Scanners and Cameras window to start the wizard, select the device, and install it. The Scanner and Camera Wizard is designed specifically for installing imaging devices, but it works in a similar way as the Add Hardware Wizard. To open the

Scanners and Cameras window, click the Start button on the taskbar, click Control Panel, then double-click the Scanners and Cameras icon . After you install your scanner or digital camera, you can test it to make sure it works properly. With the scanner or camera connected to your computer, right-click the scanner or camera you want to test, click Properties, click the General tab in the Properties dialog box, then click Test Scanner or Test Camera. A message appears, telling you the results of the test.





Viewing System Hardware


When you install a new operating system, such as Windows XP, it is important to make sure that you are using the latest software drivers with your system hardware. If you are not using the latest software drivers, your hardware devices might not work to full capacity. You can view your system hardware using a Windows utility called the Device Manager. With the Device Manager, you can determine the software driver versions being used with your system hardware, update the software driver with a newer version, roll back to a previous driver version if the device fails with the new one, or uninstall a driver. After viewing your software driver version numbers, you can contact the manufacturer or visit their Web site to determine the latest versions. Most manufacturers allow you to download drivers from their Web sites for free.  John wants to make sure that he is using the latest software driver version numbers.

Steps 1 2 3 4

QuickTip

If a specific device conflicts with some other device, its icon is marked by an exclamation point within a yellow circle , as shown in Figure N-11.



1. In the Control Panel, scroll if necessary, double-click the **System icon** , click the **Hardware tab** in the System Properties dialog box, then click **Device Manager**


The Device Manager window opens, as shown in Figure N-11. Device Manager provides you with a list of the hardware types, also known as **hardware classes**, which are attached to your computer. To see the specific devices within a hardware type, you click the Expand indicator  next to the hardware device type. Once you select a specific device within a hardware device type, you can investigate the properties of the hardware device. On your computer, you use an older display adapter, a hardware device that allows a computer to communicate with its monitor, so you decide to learn about its properties.

2. Click the **Expand indicator**  next to the Display adapters icon

The display expands to show the name of the display adapter attached to your computer.

QuickTip

To disable a hardware device, click the hardware device in the Device Manager, click the Disable button  on the toolbar, then click Yes. To enable the device, click the Enable button  on the toolbar.

3. Click the **display adapter type** that is connected to your computer, then click the **Properties button**  on the toolbar

The Properties dialog box for your display adapter type opens with the General tab, showing identification and status information about the display adapter. The other tabs available on the Properties dialog box are Driver and Resources. The Driver tab lists the software drivers related to the hardware device and other options, while the Resources tab lists the memory settings related to the hardware device.

4. Click the **Driver tab**

The Driver tab appears, displaying driver information, such as manufacturer name, date published, and version number, as shown in Figure N-12. You can also click Driver Details to learn more about the current version of the software driver, click Update Driver to install the latest driver for the display adapter that is connected to your computer, click Roll Back Driver to revert back to the previous driver installed, or click Uninstall to remove a driver.

5. Click **Driver Details**

Details for the current driver are shown in the Driver File Details dialog box, including the driver file version number.

QuickTip

To view hardware devices by what they connect to, click View on the menu bar, then click Devices by connection.

6. Click **OK** to close the Driver File Details dialog box, then click **OK** to close the display adapter Properties dialog box

You return to the Device Manager window.

7. Click the **Collapse indicator**  next to the Display adapters icon

The list of display adapters collapses. Leave the Device Manager open as you continue to the next lesson.

FIGURE N-11: Device Manager window

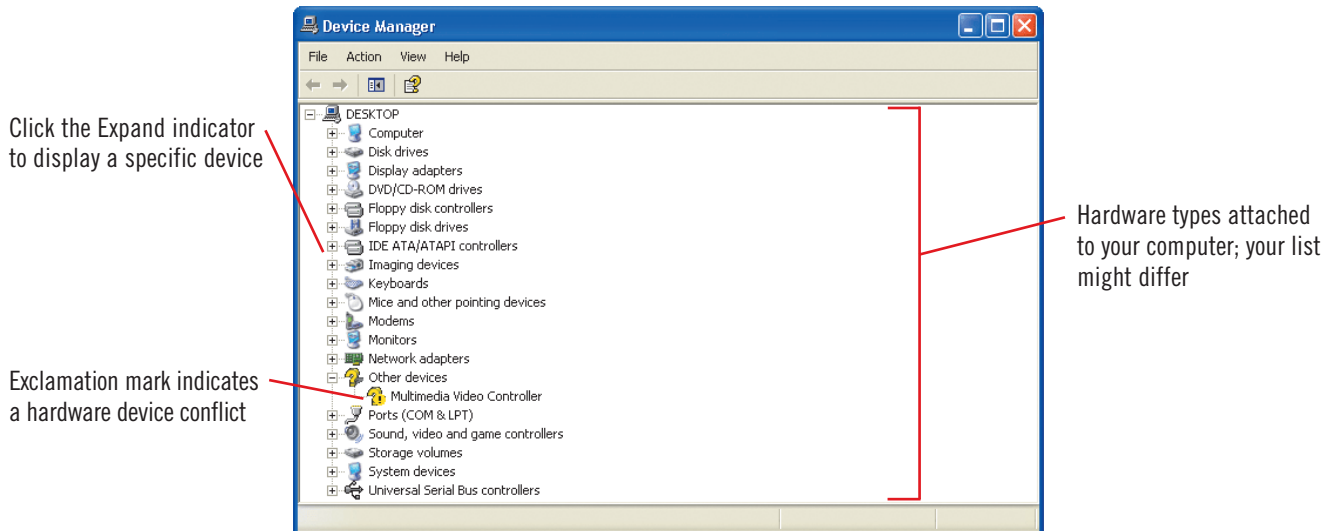
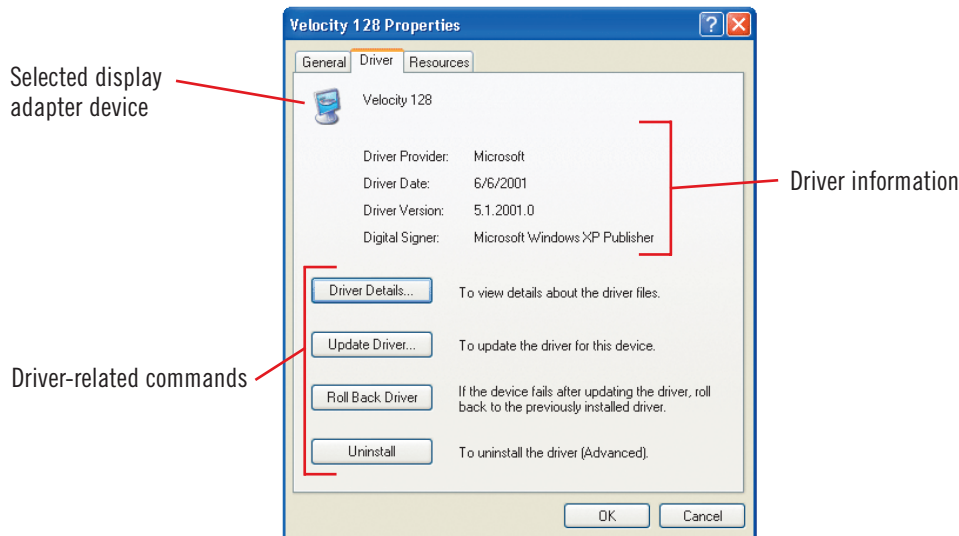


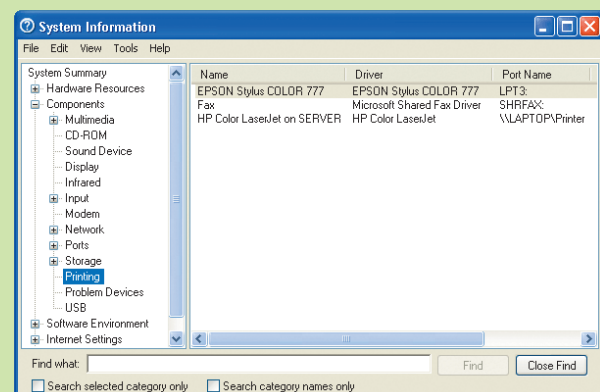
FIGURE N-12: Display Adapter Properties dialog box



Getting system information


If you encounter a system problem, you may need to give information to a support technician. Support technicians require specific information about your computer so that they can resolve your system problem. In Windows XP, you can use System Information to quickly collect and display your system configuration data, as shown in Figure N-13. To open the System Information window, click the Start button on the taskbar, point to All Programs, point to Accessories, point to System Tools, then click System Information. For information about working in the System Information window, click Help on the menu bar, then click Contents.

FIGURE N-13: System Information window






Viewing Hardware Settings

One reason you might want to view hardware settings is if you plan to install any legacy hardware. **Legacy hardware** is any device not designed for Windows XP plug and play support. If you have a hardware device that is not designed for Windows XP plug and play, it is important to find out current hardware resource settings to avoid conflicts during installation, such as having two devices with the same resource settings. Before you actually place a legacy hardware device in your computer, you should browse through the devices currently attached to your computer system and ensure that your computer has the available resources to install the hardware device. With the Device Manager, you can view the device resources that are being used with your system hardware and determine whether your computer has the available resources to install a legacy or plug and play hardware device. Generally, you cannot install non plug and play hardware without performing some manual setup with the Device Manager.  John has an old scanner and wants to examine current hardware resource settings to determine whether he can install the legacy hardware.

Steps 1234

QuickTip

To scan for any hardware changes in the Device Manager, click the Scan for hardware changes button  on the toolbar.


1. In the Device Manager window, click **View** on the menu bar, then click **Resources by connection**

The resources installed on the computer appear in a tree structure sorted by connection.

2. Click the **Expand indicator**  next to the Interrupt request (IRQ) icon

The Device Manager displays the resource settings currently in use and the hardware that is using each resource, as shown in Figure N-14. Each installed device requires a communication line called an **interrupt request line (IRQ)**, which allows the physical hardware device to communicate with your computer's software. For example, when you press a key on your keyboard, a signal is sent from the keyboard (a hardware device) through an IRQ to Windows (computer software), which then performs an action. Two devices attempting to share an IRQ create an IRQ conflict, and neither device will work properly.

QuickTip

To get additional information about Device Manager, click the Help button  on the toolbar.

3. Drag the **scroll bar** to the bottom of the dialog box if necessary

Take note of the available IRQs on your computer. Any IRQ number between 0 and 15 that is not listed is available. When you install a legacy hardware device, the device's instructions might ask you to provide an IRQ setting. When prompted by the device instructions, provide an IRQ that is not already in use. Instead of writing down your computer resource information on paper, you can print a system summary report.

4. Click **Action** on the menu bar, then click **Print**

The Print dialog box opens with the System summary report type selected by default, as shown in Figure N-15. Table N-2 describes the report options available in the Print dialog box.

Trouble?

If you are working in a lab, check with your instructor before printing.

5. In the Select Printer box, click a connected printer, then click **Print**

Figure N-16 shows the first part of the summary report. If you are having trouble installing a hardware device, a technical support person might ask you questions that this summary report will help you answer. Leave the Device Manager open as you continue to the next lesson.

TABLE N-2: Print dialog box report types

report types	description
System summary	Prints general system, IRQ, port, memory, and DMA channel usage information about your computer
Selected class or device	Prints device type, resource, and driver information for a selected class or device
All devices and system summary	Prints general system, IRQ, port, memory, DMA channel usage, and driver information for all devices

FIGURE N-14: Device Manager window in Resources by connection view

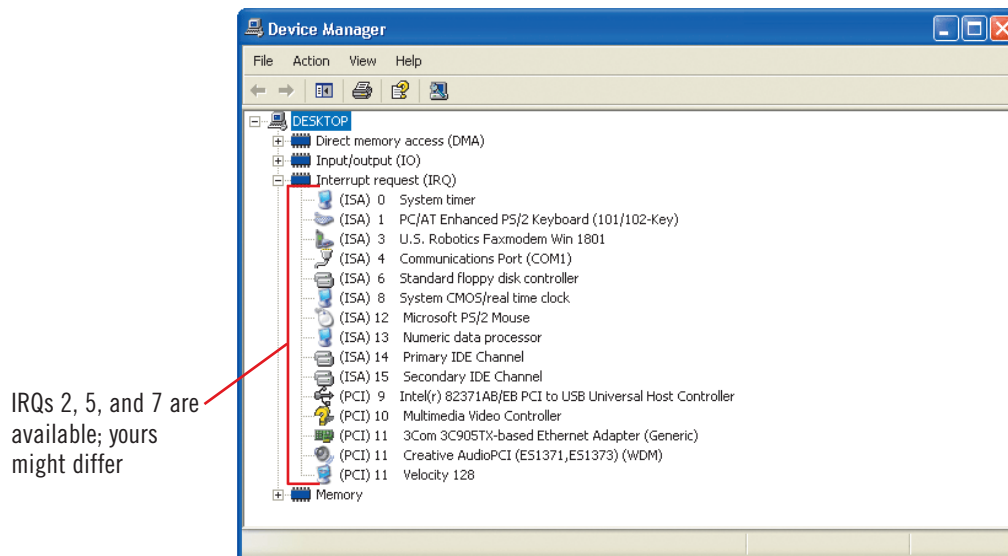


FIGURE N-15: Printing a hardware summary report

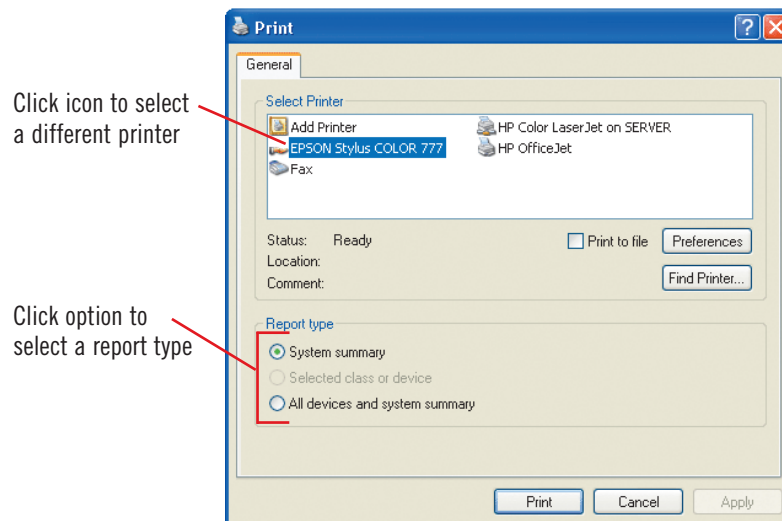
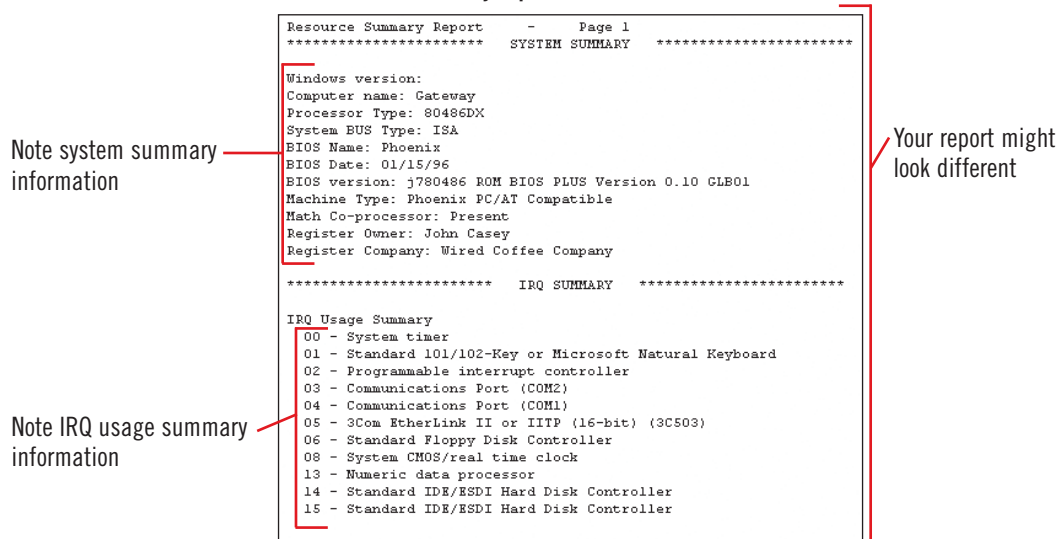



FIGURE N-16: Summary report










Removing Hardware Devices

If you no longer use a hardware device, or you have an older hardware device that you want to upgrade, you need to remove the hardware device drivers and related software before you remove the physical hardware device from your computer. With the Device Manager, you can quickly and easily remove hardware devices and any related device drivers. Before you remove a legacy device, printing the device settings is a good idea in case you need to reinstall the device later. Just as you can use the Printers window to install a printer, you can remove a printer in the Printers window as well.  John decides not to connect the digital camera and printer he installed to his computer after all, so he wants to delete both of them.

Steps 1234

QuickTip

To print out device settings, select the device in the Device Manager, click the Print button  on the toolbar, then click Print.

1. In the Device Manager window, click **View** on the menu bar, then click **Devices by type**
The devices installed on the computer appear in a tree structure sorted by type.
2. Click the **Expand indicator**  next to the Imaging devices icon
The imaging devices currently installed on the computer appear under the Imaging devices icon.
3. Click **Agfa ePhoto 1280 Digital Camera** to select the device you want to remove, as shown in Figure N-17
4. Click the **Uninstall button**  on the toolbar
The Confirm Device Removal dialog box opens.
5. Click **OK** to remove the device, click the **Close button** in the Device Manager window, then click **OK** in the System Properties dialog box to close it
You return to the Control Panel window.
6. Double-click the **Printers and Faxes icon**  (Professional or Home edition with Fax Services installed) or the **Printers icon**  (Home edition without Fax Services installed), then click the **HP OfficeJet icon**
The HP OfficeJet icon appears highlighted in the Printers window, as shown in Figure N-18.
7. In the task pane, click **Delete this printer**
The Printers dialog box appears, asking if you want to delete the printer.
8. Click **Yes** to confirm the deletion, then click **Yes** if the default printer message box appears
This removes the HP OfficeJet icon from the Printers window.
9. Click the **Close button** in the Printers and Faxes window

Trouble?

If a printer contains a print job, the Delete command does not work. You need to purge all print jobs before you can delete a printer.



Using the hardware troubleshooter

A hardware conflict can occur when two or more devices try to use the same IRQ. In many cases, one of the devices will not work. If you have a conflict, you can use the hardware troubleshooter to help you fix the problem. To use the troubleshooter, open the Properties

dialog box from the Device Manager for the hardware device that is not working, then click Troubleshoot on the General tab. When the Help and Support Center window opens, answer the questions provided and follow the instructions to help you fix the problem.

FIGURE N-17: Device Manager window

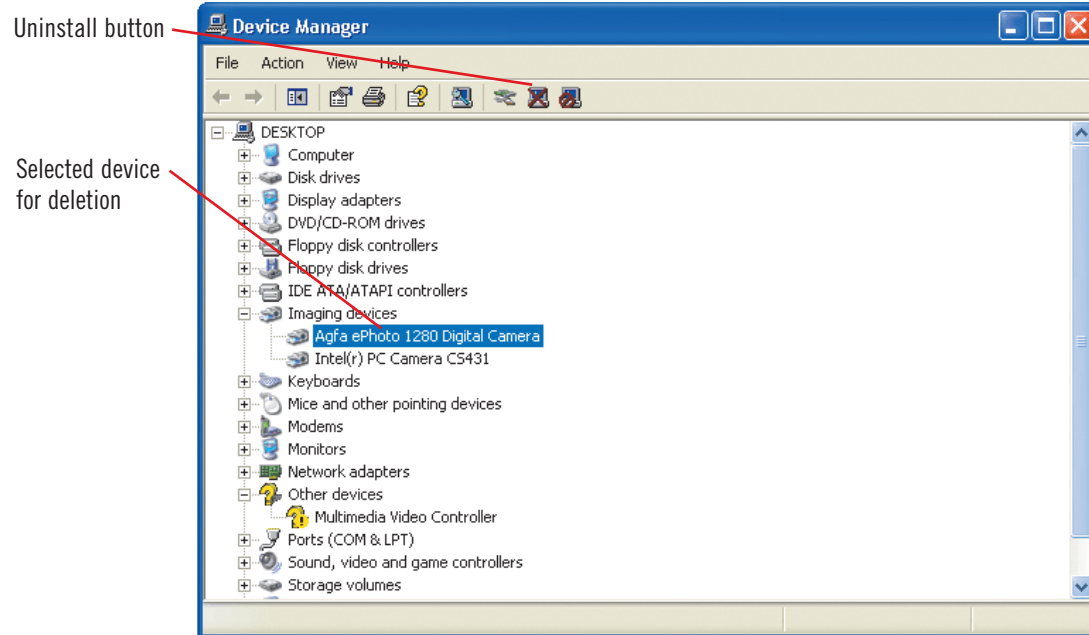
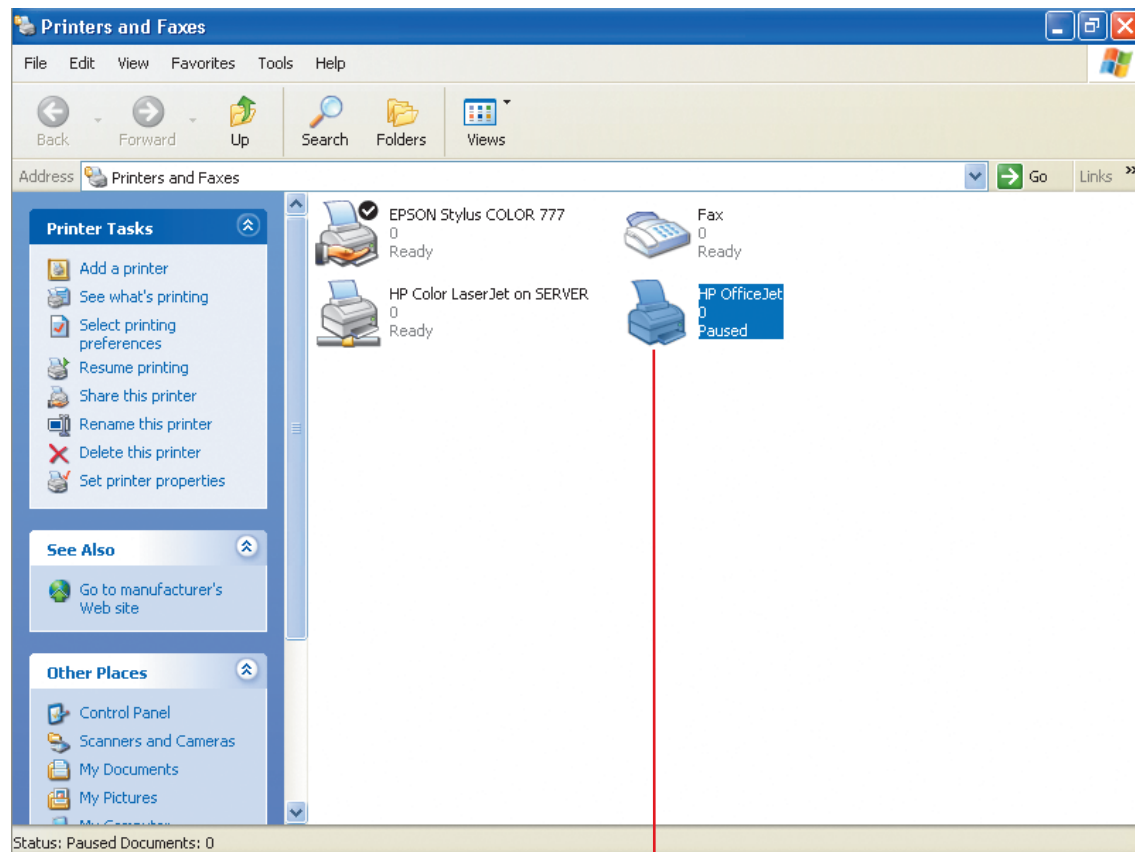


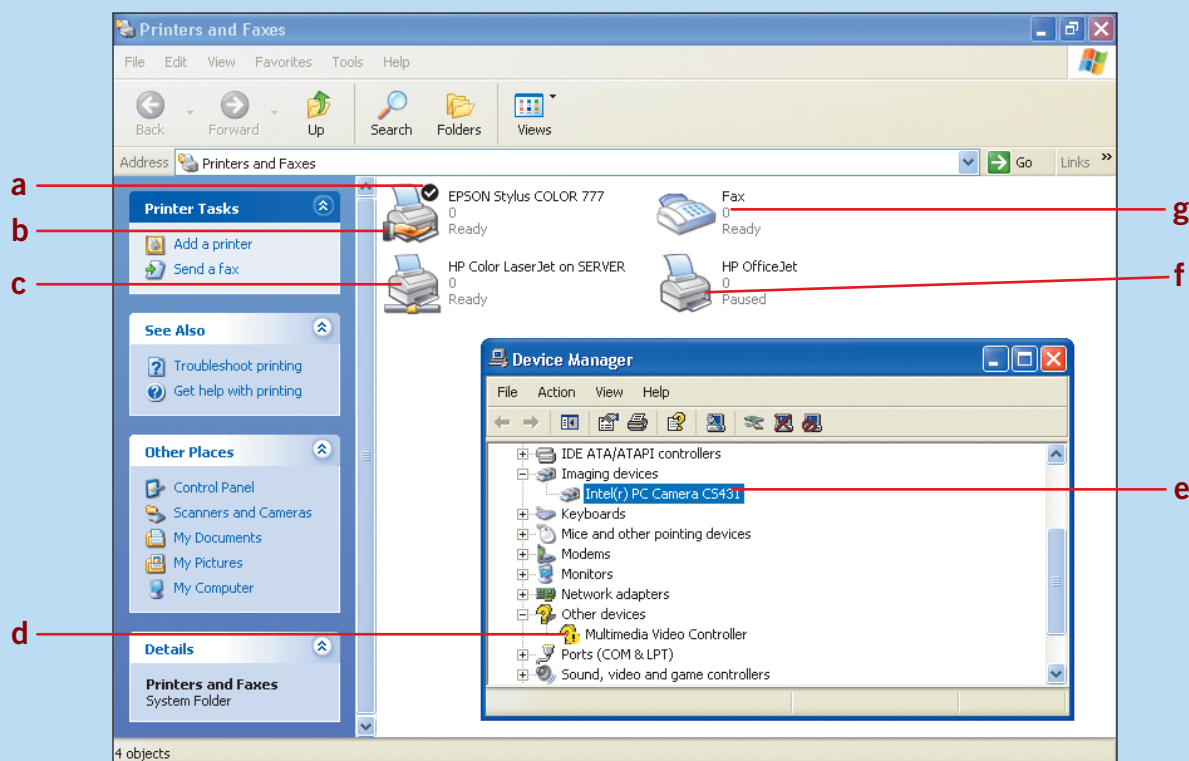
FIGURE N-18: Printers and Faxes window



► Concepts Review

Label each element of the screen shown in Figure N-19.

FIGURE N-19



1. Which element points to a local printer?
2. Which element points to a shared printer?
3. Which element points to a network printer?
4. Which element points to the default printer?
5. Which element points to a hardware device?
6. Which element points to a hardware device with a conflict?
7. Which element points to the number of files to be printed?

Match each of the terms with the statement that describes its function.

- | | |
|-------------------------|--|
| 8. Driver | a. Location on a computer where you connect a cable |
| 9. Plug and play device | b. Location where you work with device drivers |
| 10. Port | c. Hardware designed for Windows XP |
| 11. Device Manager | d. How hardware communicates with Windows and other software |
| 12. Legacy device | e. How a device communicates with a dedicated line |
| 13. IRQ | f. Hardware designed for pre-Windows XP |

Select the best answer from the list of choices.

14. Which of the following is a way to print a document?
- a. Select the Print command from a program.
 - b. Right-click a document, then click Print.
 - c. Drag a document to the printer icon.
 - d. All of the above.
15. When right-clicking a printer icon, which of the following can you NOT do?
- a. Open the printer's window.
 - b. Set the printer as the default printer.
 - c. Delete the printer.
 - d. Close the printer's window.
16. Which tab in the Printer Properties dialog box do you click to check printing preferences?
- a. The General tab
 - b. The Ports tab
 - c. The Advanced tab
 - d. The Device Settings tab
17. Which of the following commands is NOT a way to stop a print job that is currently in progress?
- a. Purge Print Jobs
 - b. Pause Printing
 - c. Cancel Printing
 - d. Stop Printing
18. Which tab in the System Properties dialog box do you click to open the Device Manager?
- a. The General tab
 - b. The User Profiles tab
 - c. The Hardware tab
 - d. The Advanced tab
19. Which of the following is NOT a system report?
- a. System summary
 - b. All device and system summary
 - c. Class or device summary
 - d. Selected class or device
20. What does IRQ stand for?
- a. Interrupt result queue
 - b. Interrupt request queue
 - c. Interrupt request line
 - d. Interrupt result line

► Skills Review

1. Install a printer.

- a. Open the Printers and Faxes window (Professional or Home edition with Fax Services installed) or the Printers window (Home edition without Fax Services installed).
- b. Click Add a printer to start the Add Printer Wizard, then click Next.
- c. Click the Automatically detect and install my Plug and Play printer check box to deselect it if necessary, then click Next.
- d. Select an open port (COM or LPT), then click Next.
- e. Click Xerox as the manufacturer, click Xerox Document Centre 220 as the model, then click Next. (If necessary, click the Keep existing driver (Recommended) option button when prompted, then click OK.)
- f. Use the default printer name, click the No option button if necessary, click Next, click the Do not share this printer option button if available, then click Next.
- g. Click the No option button, click Next, then click Finish.
- h. If necessary, insert a Windows XP CD-ROM into the appropriate drive, click OK, then close the Windows XP CD-ROM window.

2. View printer properties.

- a. Select a printer icon for an available printer in the Printers and Faxes window.
- b. View printer properties.
- c. View printer preferences.
- d. Print a test page.
- e. Display the available tabs to view the various printer properties.
- f. Close the printer Properties dialog box.

3. Manage printers and print jobs.

- a. Right-click the Xerox Document Centre 220 icon, then click Pause Printing.
- b. Start Paint.
- c. Open the Burst Sign file from the drive and folder where your Project Files are located.
- d. Print the file to the Xerox Document Centre 220 printer.
- e. Open the Coffee Roast file from the drive and folder where your Project Files are located, then print the file to the Xerox Document Centre 220 printer.
- f. Close Paint.
- g. Double-click the Xerox Document Centre 220 icon in the Printers and Faxes window.
- h. Click Printer on the menu bar, then click Cancel All Documents, then click Yes.
- i. Close all of the open windows.

4. Install a hardware device.

- a. Open the Control Panel.
- b. Start the Add Hardware Wizard, then click Next.
- c. Click the Yes, I have already connected the hardware option button, then click Next.
- d. Scroll down, click Add a new hardware device, then click Next.
- e. Click the Install the hardware that I manually select from a list (Advanced) option button, then click Next.
- f. Click Infrared devices, then click Next.
- g. Click (Standard Infrared Port) as the manufacturer if necessary, click Serial Cable using IrDA Protocol as the model, then click Next.
- h. Click Next, select a port, click Next, then click Finish.
- i. If necessary, insert a Windows XP disk or CD-ROM, click OK, then close the Windows XP CD-ROM window.
- j. Click No if prompted to restart your computer.

5. View system hardware.

- a. Double-click the System icon in the Control Panel.
- b. Open the Device Manager.
- c. Click the Expand indicator next to the Infrared devices icon.
- d. Click Serial Cable using IrDA Protocol.
- e. Click the Properties button on the toolbar.
- f. Click the IrDA Settings tab, then click the Driver tab.
- g. Click OK.
- h. Click the Collapse indicator next to the Infrared devices icon.

6. View hardware settings.

- a. In Device Manager, click View on the menu bar, then click Resources by connection.
- b. Click the Expand indicator next to the Interrupt request (IRQ) icon.
- c. Click an IRQ in the list.
- d. Click Action on the menu bar, then click Print.
- e. Click the Selected class or device option button, then click Print.

7. Remove hardware devices.

- a. In Device Manager, click View on the menu bar, then click Devices by type.
- b. Click the Expand indicator next to the Infrared devices icon.
- c. Click Serial Cable using IrDA Protocol.
- d. Click the Uninstall button on the toolbar, click OK, click Yes to restart the computer if necessary, then reopen the Device Manager after restarting if necessary.
- e. Click the Close button in the Device Manager, then click OK to close the System Properties dialog box.
- f. In the Control Panel, double-click the Printers and Faxes icon (your icon name might differ with the Home edition).
- g. Click the Xerox Document Centre 220 icon.
- h. Click Delete this printer in the task pane, click Yes, then click Yes in the default printer message box if necessary.
- i. Close the Printers and Faxes window.

► Independent Challenge 1

You are an administrator at the U.S. Geological Survey and are in charge of creating earthquake reports on seismic activity in California. Your boss recently approved the purchase of a new color printer to help you create better reports. You want to install the color printer on your computer.

- a. Install a printer using the Add Printer Wizard.
- b. Assume the following about the installation: the printer is local, use an open port (LPT or COM), the manufacturer is Tektronix, and the printer model is Tektronix Phaser II PX.
- c. Do not set the printer as default or make it shared, and do not print a test page.
- d. Open the Printer Properties dialog box, then verify that the port and printer assignments are correct.
- e. Print the Printer Properties dialog box. (Press [Print Screen] to make a copy of the screen, open Paint, click Edit on the menu bar, click Paste to paste the screen into Paint, then click Yes to paste the large image if necessary. Click the Text button on the Toolbox, click a blank area in the Paint work area, then type your name. Click File on the menu bar, click Page Setup, change 100 % normal size to 50% in the Scaling area, then click OK. Click File on the menu bar, click Print, then click Print.)
- f. Delete the printer you just added.
- g. Close all open windows.

► Independent Challenge 2

You are the director of a youth center called Hosanna Homes for troubled teens. Half of your funding comes from the state, and the other half comes from donations. At the end of the month, you need to send a report to the state indicating the status of each teen at the home. You also send a report to donors to let them know what happened during the month. For this challenge, create several reports, print the documents, and manage the print jobs.

- a. Use a real, working printer that is attached to your computer.
- b. Pause printing. Get permission from your instructor or technical support person to do this.
- c. Assume the following information about the youth center:
Hosanna Homes ID: 251523
35 Live Oak Ranch Road
Livermore, TX 82510
- d. Using WordPad, create a file named **June State** on the drive or folder where your Project Files are located, then enter the following information:

State of Texas Protective Services

Name	Age	Level	Number of Days
Maura Colligan	16	4	30
Brian Hubbard	17	5	30
Jill Meyer	16	3	30
David Smith	17	4	30
Earl Todd	15	1	16

- e. Print the document on the chosen printer.
- f. Open a new WordPad window, and create a file named **June Donor** on the drive where your Project Files are located, then enter the following information:

Dear Donor,

During the month, Hosanna Homes received a new teenager at the ranch. His name is Earl Todd. He is 15 years old. His hobbies are playing football and basketball, and drawing sports pictures.

Hosanna Homes is in need of sports and recreational equipment. If you or anyone you know has any equipment to donate, please contact me at the main office.

Thank you for all your support.

Your name, Director

- g. Print the document using the chosen printer.
- h. Open the printer window, then cancel the print job June State.
- i. Choose the Pause Printing command to turn off Pause Printing, and print the job June Donor.
- j. Check the status of the printer.
- k. Open the file **June State** in the WordPad window, change the number of days for Earl Todd from 16 to 18, then save the file.
- l. Print the file, then close all open windows.

► Independent Challenge 3

You are the owner of Lasting Impressions, a photography studio that specializes in wedding and location photography. To increase revenues and streamline production, you want to add the ability to take digital wedding photos for your photography clients. Before you invest in the hardware and software needed, you decide to install a digital camera and check your computer's hardware properties for the device.

- a. Open the Control Panel.
- b. Open the Scanners and Cameras window.
- c. Click Add an imaging device in the task pane.
- d. Install a Kodak digital camera.
- e. Display the properties for this device.
- f. Print the screen. (See Independent Challenge 1, Step e for screen printing instructions.)
- g. Remove the Kodak digital camera.
- h. Close all open windows.

► Independent Challenge 4

You are an engineer at Denson Engineering, an international company that specializes in technical drawings. You want to install a special hardware device to create 35mm slides for a technical presentation that you developed with some of your drawings. During the installation of the legacy hardware, you encounter some problems. When you call technical support, the representative asks you to print a resource summary report to help diagnose the problems.

- a. Open the Control Panel.
- b. Open the System Properties dialog box.
- c. Open the Device Manager window and choose to view devices by type if necessary.
- d. View the IRQ resources.
- e. Print a resource summary report for a selected IRQ resource.
- f. Close the Device Manager window, then click Cancel in the System Properties dialog box.
- g. Close all open windows.

► Visual Workshop

Display information about a keyboard, as shown in Figure N-20. Your results will differ from the ones shown here. Print the screen. (See Independent Challenge 1, Step e, for screen printing instructions.)

FIGURE N-20

